

G LAUB FARM MANAGEMENT

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MID SOUTH VIEWPOINTS

FALL 2018

DRONE APPLICATIONS ON LAND AND FARMS



Agriculture's increase in technology from the late 1800s to the early 1900s caused a steady migration from the family farms to the cities, leaving fewer people to assume the burden of producing more food. This has only been exacerbated in the past ten to twenty years by the development and adoption of GPS guidance systems, a heavy emphasis on efficiency and precision application when planting, growing and harvesting crops.

Today, the sky is the limit for technology due to the recent acceptance of small unmanned aerial vehicles (UAVs) for commercial purposes. The desire to find ways to make our jobs more efficient has been almost overwhelming; however,

the question that remains to be answered is, *do these tools have practical value in the agricultural industry or are they simply gimmicks?*

After trial and error experimentation in various situations, we found what we believe to be the strengths and weaknesses, as well as the potential applications, of using UAVs in the field. Through this process, we discovered that drones have a phenomenal and unrivaled vantage point. Such footage is exceptionally valuable whether you are taking videos for real estate, looking at a low spot in a field when it's wet, or just trying to understand the dynamics of a piece of property. This is beneficial to all parties, from landowners, farm operators and professional farm managers to insurance agents, consultants and even government agencies. Satellite images have been—and will continue to be—useful tools, but a drone offers a real-time interactive experience of a farm that is unmatched.

Another popular application for drone technology has been crop health imagery and herd health management. While we have not been able to utilize tools for herd health specifically, crop imagery is both an exciting and valuable tool. Users have the ability to catch a full glimpse of a field as it is stitched together on a phone, tablet or computer, and software can point out the healthy and struggling spots in the field. Increasingly, some services are able to detect and differentiate details such as a water stress problem or weed pressure issue.

Despite its advantages, there can be issues with this technology on the basis of reliability and expense. Can you always get a reliable image of a field? No. This takes practice and working around different environmental factors such as time of day, cloud cover and even crop duster traffic. It requires a reasonable amount of patience and time that most farm operators may not directly have available. Thus, at times, drones may be better suited for professional farm managers, insurance agents, researchers and other professionals who have more resources to work around these constraints.

The other concern is that of price. Reliable, high-quality drones range from \$100 to several thousands of dollars, depending on models and additional equipment. What must be considered is the practical applications a drone will be used for and what economic value can be placed on that service. With these considerations in mind, a budget may be established. The next question is whether a drone exists in that price range that has the required capabilities. Not to show favoritism, but DJI produces very high-quality drones at the most competitive prices. There are cheaper drones available, but it's quite likely you will regret your decision if you purchase an off-brand. If you wish to process crop health imagery, please be aware of the probable need to purchase a software subscription which can range from free to a couple thousand dollars per year, all depending on what you would like to accomplish.

Finally, the FAA has recently set some regulations regarding drones. Generally, if you are flying under 400 feet, avoiding airports and are not receiving compensation of any kind, you do not concern them. If you plan to fly for monetary gain (commercial purposes) you will need to obtain a UAV pilot's license through the FAA. Either way, if you plan to purchase a drone, it would be advantageous to read up on the regulations the FAA has put on UAVs. You can do so online at www.faa.gov/uas.

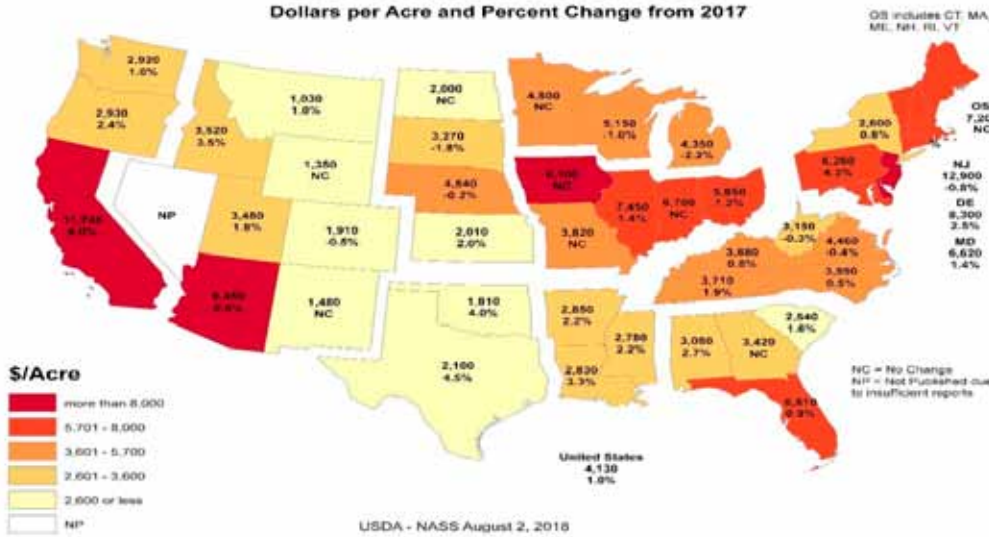


Samuel King, GFM Intern
samuel.king@smail.astate.edu

2018 MID-SOUTH CROPLAND VALUES, RENTS & INVESTMENT RETURNS

2018 Cropland Value by State

Dollars per Acre and Percent Change from 2017



The National Agricultural Statistical Service (NASS) recently released its 2018 Land Value Report. The report shows that U.S. farm real estate value increased 1.9% to \$3,140/acre while the average U.S. cropland value increased to \$4,130/acre—an increase of \$40/acre from 2017.

In the Delta states and Mid-South, cropland values increased from one year ago. Arkansas irrigated cropland increased 2.4% to \$3,380/acre, and non-irrigated cropland values increased 2.5% to \$2,050/acre. Irrigated cropland values in Mississippi increased 2.8% to \$3,320/acre, while non-irrigated

cropland values increased 1.6% to \$2,520/acre. Missouri irrigated cropland values decreased 1.5% to \$5,220/acre, but non-irrigated cropland values remained the same as 2017 at \$3,700/acre. Tennessee cropland values increased 1.9% to \$3,710/acre.

The USDA also releases average cash rents for the year. Although it is the opinion of Glaub Farm Management that cash rents generally provide the lowest return in the Mid-South, we can use the data for benchmarking and return on investment comparison. Overall, U.S. cropland rent was \$138/acre, which equates to 3.3% cash return. The U.S. average total cropland return was 4.3% for 2018.

On a state-by-state basis, Arkansas irrigated cropland cash rent averaged \$136/acre, which equates to a 4% cash return for a total return of 6.4% when appreciation is added. Arkansas non-irrigated cropland cash rent averaged \$49/acre, leading to a 2.4% cash return for a total return of 4.9%. In Mississippi, irrigated cropland cash rent averaged \$143/acre, which equates to a 4.3% cash return for a total return of 7.1% when appreciation is added. Mississippi non-irrigated cropland cash rent averaged a 3.3% cash return for a total return of 4.9% at \$84/acre. Irrigated cropland cash rent in Missouri averaged \$180/acre, meaning a 3.4% cash return for a total return of 1.9% when depreciation is factored. Missouri non-irrigated cropland cash rent averaged \$125/acre, which equates to a 3.3% cash return for a total return of 3.3% since no appreciation was reported. Tennessee cropland cash rent averaged \$98/acre with a 2.6% cash return for a total return of 4.5% when appreciation is added.

By Jeffrey Hignight

USDA AUGUST PRICE FORECAST

The USDA has released its current price projections for U.S. commodities—a mixed bag of the good, the bad and the ugly, from tighter cotton supplies to larger soybean supplies. Figure 1 presents the 2017 crop year prices compared to the projected range for the 2018 crop. Cotton is a bright spot in the market and set to average a higher price than last year. World stocks-to-use is expected to be the lowest in eight years. Corn prices are projected to average about \$0.10 more per bushel than last year. The U.S. average corn yields are estimated to be a record 178.4 bu/acre, although ending stocks are expected to be down nearly 17% compared to 2017. Sorghum prices are predicted to be up slightly from last year as sorghum generally follows corn prices. Due to tightening global supplies, wheat prices are expected to be better in 2018, largely because the E.U. will likely to have its smallest wheat crop since 2012. Long grain rice prices are expected to be lower than last year due primarily to lower export forecast. Soybean prices are down significantly from last year due to large crop supplies and trade disputes with China.

USDA AUGUST FORECAST PRICE RANGES FOR U.S. COMMODITIES

Crop	unit	2017/18 estimates	2018/19 estimates	
			Low End	High End
Cotton	\$/lb	\$0.68	\$0.70	\$0.80
Corn	\$/bu	\$3.40	\$3.10	\$4.10
Sorghum	\$/bu	\$3.20	\$2.90	\$3.90
Wheat	\$/bu	\$4.73	\$4.60	\$5.60
LG Rice	\$/bu	\$5.27	\$4.73	\$5.18
Soybeans	\$/bu	\$9.35	\$7.65	\$10.15



- On Aug. 27, President Trump announced a trade deal between Mexico and the U.S. The U.S. has been working to renegotiate NAFTA, although Canada is not part of the new agreement. Both the U.S. and Mexico have left open the possibility of Canada joining negotiations.
- The first farm bill conference committee meeting was set for Sep. 5. Both the House and Senate approved their versions of the farm bill. Now the two chambers will negotiate the differences between the two bills.
- Beginning Sep. 4, eligible producers—including landowners on a crop share rent—can apply for the new Market Facilitation Program, which will provide payments at 50% of the 2018 actual production multiplied by the program payment rate. Payment rates are currently set at \$1.65/bu for soybeans, \$0.86/bu for sorghum, \$0.14/bu for wheat, \$0.06/lb for cotton and \$0.01/bu for corn. Payments per eligible person or entity will be capped at \$125,000 for the commodities. Additionally, payments are available to dairy and hog producers with a separate payment limitation. The USDA also announced that a second payment period may begin in December.
- Landowners with generic base have until Dec. 7 to convert 80% of the base to seed cotton or proportional to average crops planted during 2009-2012. The second step is to choose between the ARC and PLC programs.
- Applications for the Environmental Quality Incentives Program (EQIP) are due by Nov. 9. EQIP is a cost-share program to help landowners and producers conserve natural resources and improve farming operations.
- States with Right-to-Farm statutes may need to reevaluate after a federal jury in North Carolina awarded \$473 million verdict against Smithfield Foods. Six residents sued seeking damages due to odor. The presiding judge ruled that North Carolina's statute did not protect Smithfield from liability when neighboring homes preceded the farming operation.

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1702 Stone St., Ste C • Jonesboro, AR 72401



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Ted L. Glaub
Manager/Broker



Jeffrey Hignight
Manager/Broker



Houston M. Matthews
Real Estate Appraiser

Did You Know Soybeans have many uses?



Along with supplying food for animals and humans, soybeans have many interesting commercial uses. Soybeans are about 38% protein, thus providing an economical animal feed. In fact, approximately 70% of the US production is fed to animals. Humans consume a small share of soybean production via products such as tofu, soy milk, soy flour, vegetable burgers and vegetable oil. Soybean oil can also be turned into biodiesel. Other industrial uses include solvents, lubricants, auto upholstery, printing ink, candles and even crayons. These soy industrial products are superior to petroleum-based products because they are more environmentally friendly, less toxic and renewable.

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870.972.6996
INFO@GLAUBFM.COM
WWW.GLAUBFM.COM

1702 STONE ST., SUITE C • JONESBORO, AR 72401

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